

**Notice of Allowability**

Application No.

09/624,716

Examiner

mitra kianersi

Applicant(s)

NAM ET AL.

Art Unit

2143

**-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address--**

All claims being allowable, PROSECUTION ON THE MERITS IS (OR REMAINS) CLOSED in this application. If not included herewith (or previously mailed), a Notice of Allowance (PTOL-85) or other appropriate communication will be mailed in due course. **THIS NOTICE OF ALLOWABILITY IS NOT A GRANT OF PATENT RIGHTS.** This application is subject to withdrawal from issue at the initiative of the Office or upon petition by the applicant. See 37 CFR 1.313 and MPEP 1308.

1. ☒ This communication is responsive to Supplemental Ammendment dated April 08, 2004.
2. ☒ The allowed claim(s) is/are 1-21.
3. ☒ The drawings filed on 25 July 2000 are accepted by the Examiner.
4. ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
  - a) ☐ All    b) ☐ Some\*    c) ☒ None    of the:
  1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this national stage application from the International Bureau (PCT Rule 17.2(a)).

\* Certified copies not received: \_\_\_\_\_.

Applicant has THREE MONTHS FROM THE "MAILING DATE" of this communication to file a reply complying with the requirements noted below. Failure to timely comply will result in ABANDONMENT of this application.  
**THIS THREE-MONTH PERIOD IS NOT EXTENDABLE.**

5. ☐ A SUBSTITUTE OATH OR DECLARATION must be submitted. Note the attached EXAMINER'S AMENDMENT or NOTICE OF INFORMAL PATENT APPLICATION (PTO-152) which gives reason(s) why the oath or declaration is deficient.
  6. ☐ CORRECTED DRAWINGS ( as "replacement sheets") must be submitted.
    - (a) ☐ including changes required by the Notice of Draftsperson's Patent Drawing Review ( PTO-948) attached
      - 1) ☐ hereto or 2) ☐ to Paper No./Mail Date \_\_\_\_\_.
    - (b) ☐ including changes required by the attached Examiner's Amendment / Comment or in the Office action of Paper No./Mail Date \_\_\_\_\_.
- Identifying indicia such as the application number (see 37 CFR 1.84(c)) should be written on the drawings in the front (not the back) of each sheet. Replacement sheet(s) should be labeled as such in the header according to 37 CFR 1.121(d).**
7. ☐ DEPOSIT OF and/or INFORMATION about the deposit of BIOLOGICAL MATERIAL must be submitted. Note the attached Examiner's comment regarding REQUIREMENT FOR THE DEPOSIT OF BIOLOGICAL MATERIAL.

**Attachment(s)**

1. ☐ Notice of References Cited (PTO-892)
2. ☐ Notice of Draftperson's Patent Drawing Review (PTO-948)
3. ☐ Information Disclosure Statements (PTO-1449 or PTO/SB/08),  
Paper No./Mail Date \_\_\_\_\_
4. ☐ Examiner's Comment Regarding Requirement for Deposit  
of Biological Material
5. ☐ Notice of Informal Patent Application (PTO-152)
6. ☐ Interview Summary (PTO-413),  
Paper No./Mail Date \_\_\_\_\_
7. ☒ Examiner's Amendment/Comment
8. ☐ Examiner's Statement of Reasons for Allowance
9. ☐ Other \_\_\_\_\_

Mitra Kianersi

### ***Allowable Subject Matter***

Claims 1-21 allowed.

The following is an examiner's statement of reasons for allowance.

1. The primary reason for the allowance of the independent claims 1, and 14-15: are patentable because no pertinent prior art could be found which discloses the current limitations of Allowable Subject, wherein each net/solution pair comprises a net of the plurality of nets and a routing solution that routes the net, each net has an associated set of one or more routing solutions, at least one of the nets has a plurality of routing solutions, and the first function evaluates to true if there exists a set of values for the variables such that at least one solution is live for each net, as recited in the claims of the present application. The prior art taught by Wood requires boundary constraints on signal I/O's and coarse paths as produced by a global router to determine routability. The techniques of Wood further require that only small regions of an FPGA be considered at a time. The present invention does not require any boundary constraints or any global router to provide coarse routes, and can consider an entire device at a time.

Furthermore, Wood merely teaches a formulation that considers two major constraints, namely connectivity and exclusivity. Wood defines the connectivity constraint as ensuring that each net actually connects through a set of legal, contiguous routing resources from source to sink. The present invention starts with a set of routing solutions, thereby eliminating the need for a connectivity constraint. Also, the present invention considers the two constraints of liveness and exclusivity in its formulation. That is, the formulation of Wood relies on a connectivity constraint, whereas the present invention relies on a liveness constraint.

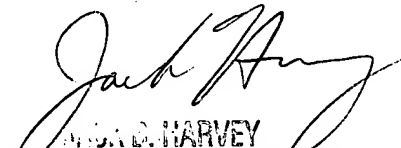
### ***Conclusion***

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Mitra Kianersi whose telephone number is (571) 272-3915. The examiner can normally be reached on 7:00AM-4:00PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, David Wiley can be reached on (571) 272-3923. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Mitra Kianersi  
Oct/21/2004

  
JACK D. HARVEY  
SUPERVISORY PATENT EXAMINER